Green's (Circulation) Thm

$$\int_C \vec{F}\cdot\vec{T}\,ds = \iint_D \text{curl}\,\vec{F}\cdot\hat{k}\,dA$$

Divergence Theorem

$$\iint_S \vec{F}\cdot d\vec{S} = \iiint_E \text{div}\,\vec{F}\,dV$$

Green's Flux Thm

$$\int_C \vec{F}\cdot\vec{n}\,ds = \iint_D \text{div}\,\vec{F}\,dA$$

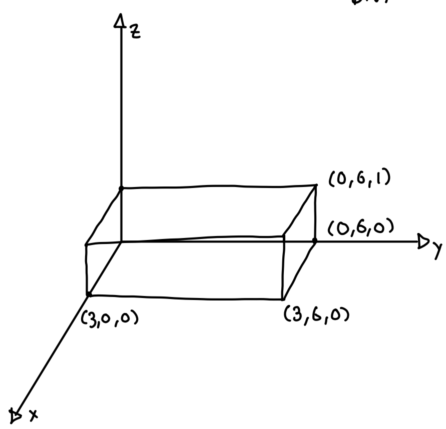
$\vec{F} = \langle P, Q, 0\rangle$

$\text{div}\,\vec{F} = P_x + Q_y$

16.9.1) $\vec{F}\langle x,y,z\rangle = \langle xye^z,\ xy^2z^3,\ -ye^z\rangle$

$x=3,\ y=6,\ z=1$

$$\iint_S \vec{F}\cdot d\vec{S} = \iiint_E \text{div}\,\vec{F}\,dV$$



$\text{Div}F = \frac{\partial}{\partial x}xye^z + \frac{\partial}{\partial y}xy^2z^3 + \frac{\partial}{\partial z}-ye^z$

$ye^z + 2xyz^3 - ye^z$

$$\iiint_E 2xyz^3\,dx\,dy\,dz$$

$$\int_0^1\int_0^6\int_0^3 2xyz^3\,dx\,dy\,dz$$